

Confidential Information

Optical Card

System Description

Audio

This is a delta document only

Version 1.1

December 2002

SONY

PHILIPS

CARD SPECIFICATION**Standard atmospheric conditions for testing**

Measurements and mechanical checks are to be carried out at any combination of temperature, humidity and air pressure within the following limits, unless otherwise specified:

Ambient temperature	15°C to 35°C
Relative humidity	45% to 75%
Air pressure	86 kPa to 106 kPa

The optical pick up unit for card measurement

Wavelength: 780 ± 10 nm; numerical aperture: 0.45 ± 0.01 ; the intensity at the rim of the pupil of the objective lens should be larger than 50% of the maximum intensity value; diffraction limited performance of the optical system (within the Marechal criterion).

Characteristic to be specified	Requirements	Method of Measurement and/or conditions
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GENERAL**1. Read out system**

1.1. read out mode	in reflection, through transparent card.	
1.2. track shape	one spiral	no track interruption in information area

CARD GEOMETRY

see fig. 1

if profiling is present see detail D

All Optical Cards should have centering elements (e.g. bumps, corners or rims) to match provisions in loader mechanisms for 80 mm CDs.

2. Outer diameter

2.1. outer dimensions of card	length ≤ 90 mm width ≤ 63.5 mm	measured at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ RH
2.5. card unbalance	≤ 10 g.mm recommended	
2.6. card shape	only Shape A and Shape B are permitted, see Figure 1	

3. Centre hole

3.1. diameter	$15^{+0.1}_0$ mm	measured at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ RH
3.2. shape of centre hole	cylindrical	
3.3. edge shape	chamfer or radius permitted. Burrs at the information side of the card are permitted.	See fig. 1

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Characteristic to be specified	Requirements	Method of Measurement and/or conditions
8.4. reflection and substrate transmission (double pass)	> 70%	
8.5. maximum variation of reflection and double pass substrate transmission	3%	for frequencies < 100 Hz card rotation at scanning velocity

RECORDED AREA

9. Recorded area

9.1. starting diameter of program area	50 ⁺⁰ _{-0.4} mm] measured at 23 ±2°C and 50 ±5% RH
9.2. max. diameter of program area	59.5 mm	
9.3. max. starting diameter of lead-in area	46 mm	
9.4. min. outer diameter of lead out area	outer diameter of program area plus 1 mm	

10. Track pitch

10.1. track pitch	1.6 ± 0.1 µm	in program area and lead in/out area
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11. Rotation

11.1. sense of rotation	counter clockwise	seen from read out side
11.2. scanning velocity	1.20 - 1.40 m/s	
11.3. max. velocity variation on one card	± 0.01 m/s	

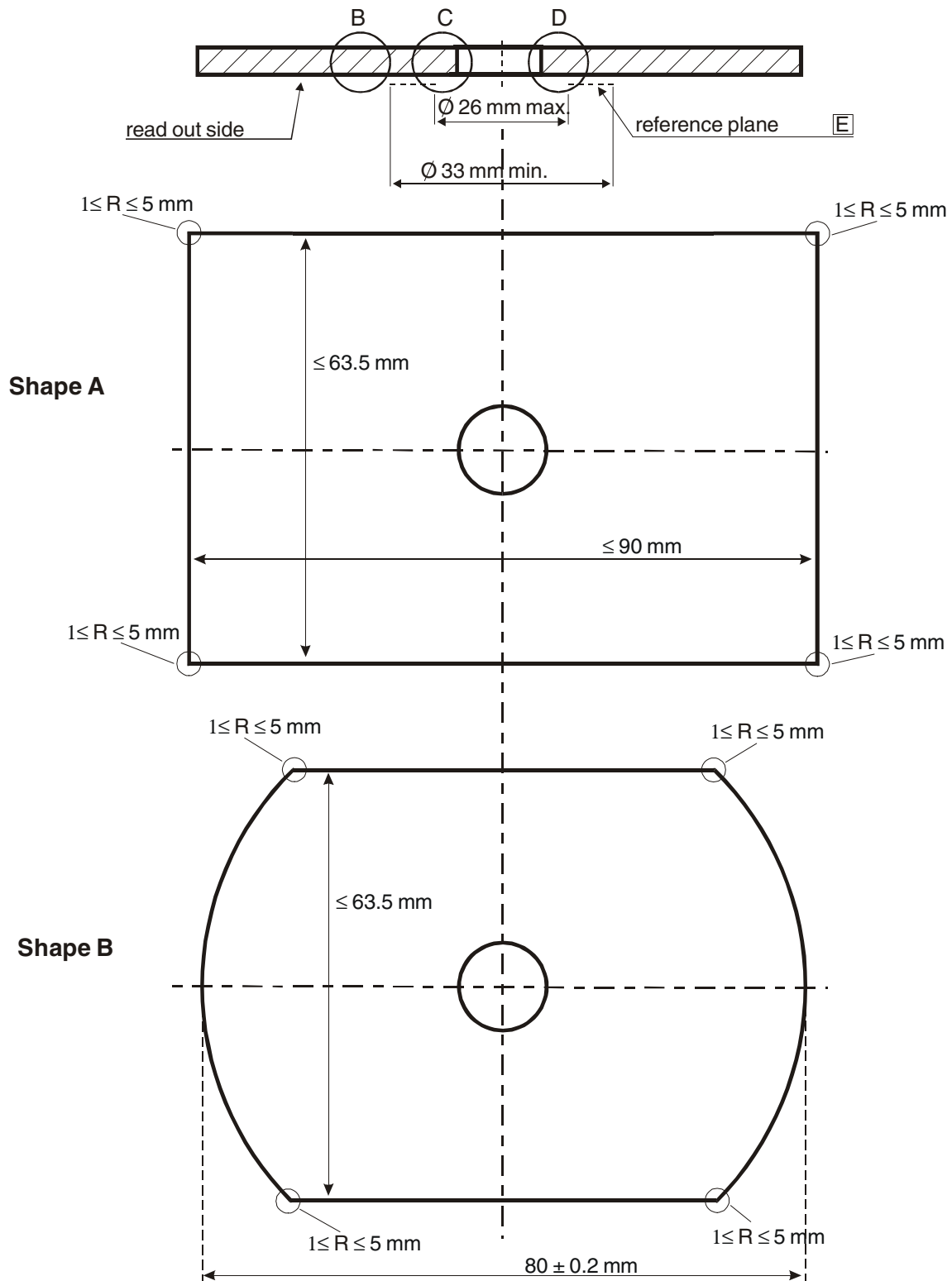


Fig. 1 Card, including reflective layer, protective layer and label.

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List of Changes

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List of Changes

Differences between Optical Card System Description Audio, version 1.0, September 2000 and Optical Card System Description Audio, version 1.1, December 2002.

Main General Changes:

- ° Philips contact address has been updated

Main Technical Changes:

- ° Card dimensions: increased size;
- ° Maximum outer diameter of Information Area.

Page	Version 1.1	Version 1.0	Remarks
2	2.1 Outer dimensions of card Width ≤ 63.5 mm	2.1 Outer dimensions of card Width ≤ 60 mm	Width expanded
4	9.2 Max. outer diameter: 59.5 mm	9.2 Max. outer diameter: 56 mm	Outer diameter expanded
8	Fig 1: Width 2.1 Outer dimensions of card: Shape A: Width ≤ 63.5 mm Shape B: Width ≤ 63.5 mm	Fig 1: Width 2.1 Outer dimensions of card: Shape A: Width ≤ 60 mm Shape B: Width ≤ 60 mm	Width expanded
8	Fig 1: Shape A and B edge specification $1 \leq R \leq 5$ mm	Shape A and B edge specification $R \leq 4$ mm	Modified